Object in Motion stays in motion

Or does it?

Objective

- Examine changes from quarter to quarter in a Basketball game
- Build a Predictive model on playing time in a quarter
- Build a Predictive model on points scored in a quarter

Methodology

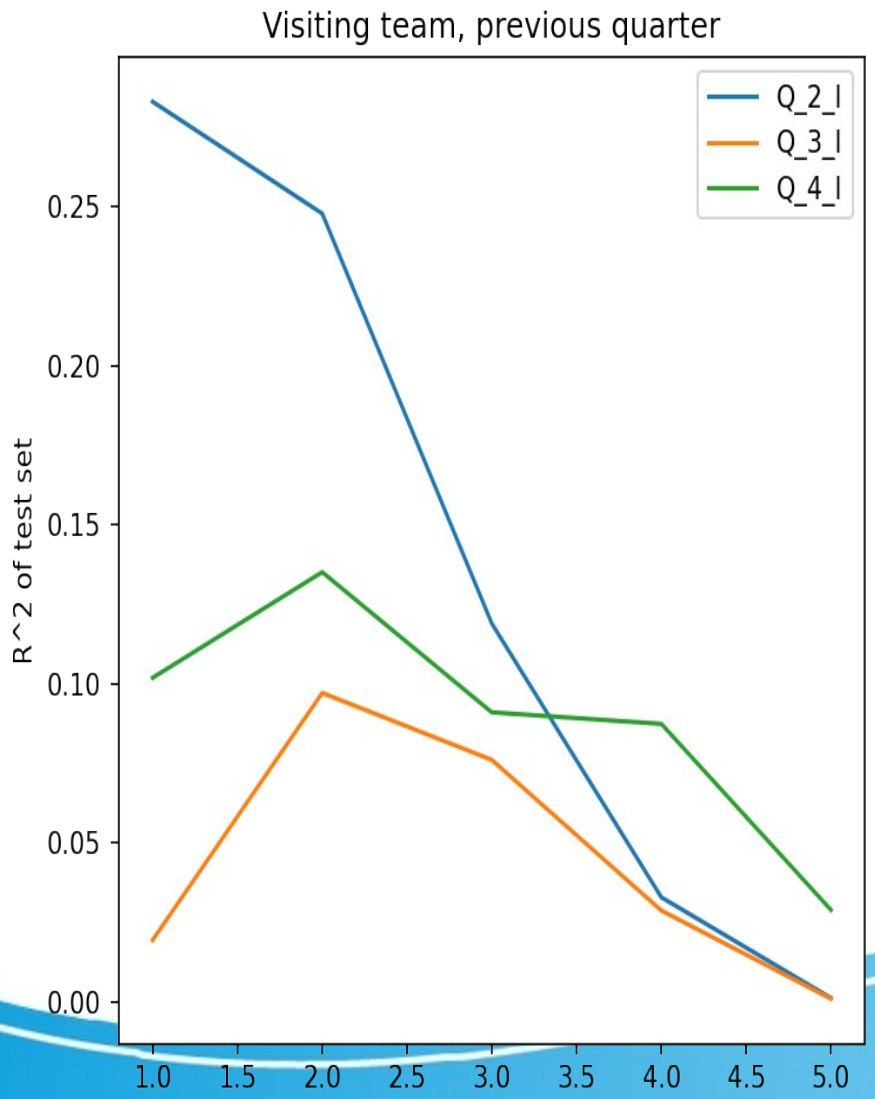
DATA Gathering:

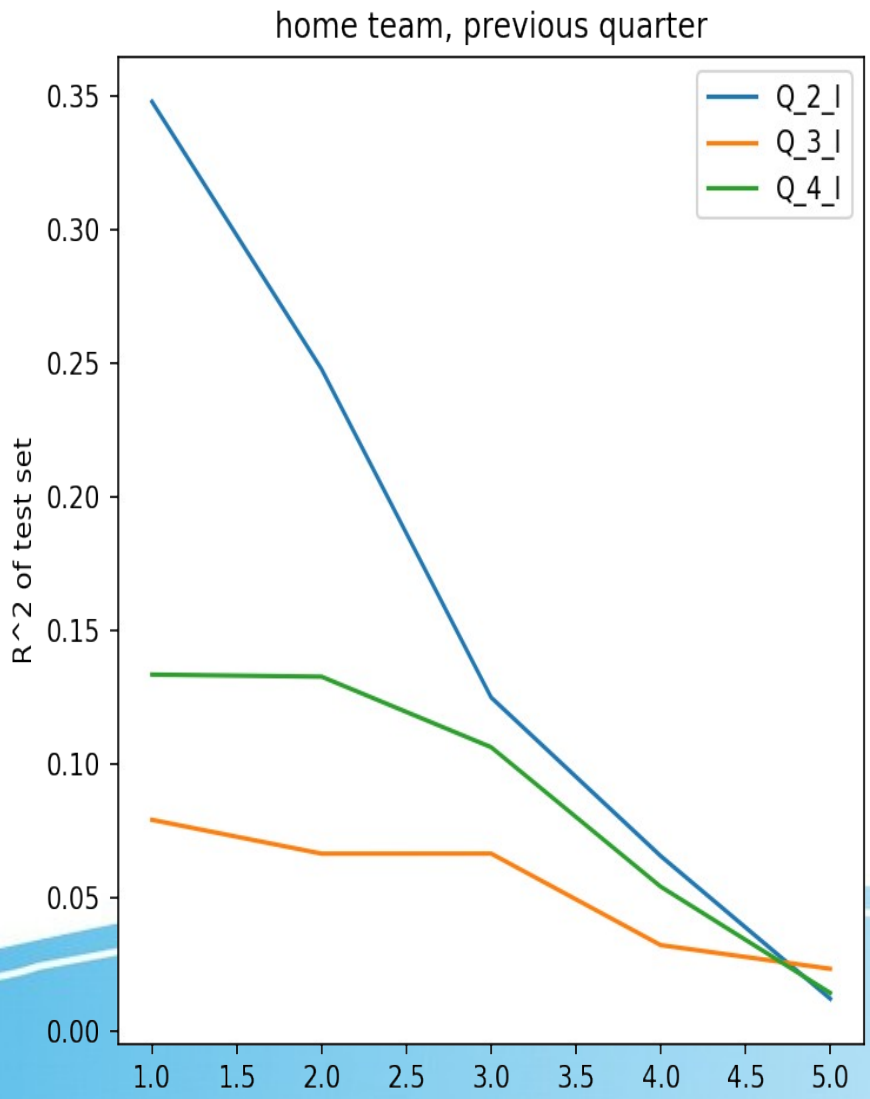
- Web Scrapping using Basketball-reference.com
  - 2016-2019 regular season, 3000+ data point
- Per game data:
  - Playing time per player,
  - scores per quarter
- Per player data:
  - Age, games played

Processing:

- Linear and Polynomial
- Regularization with LASSO.
- Multi-colinearity

Predict playing time





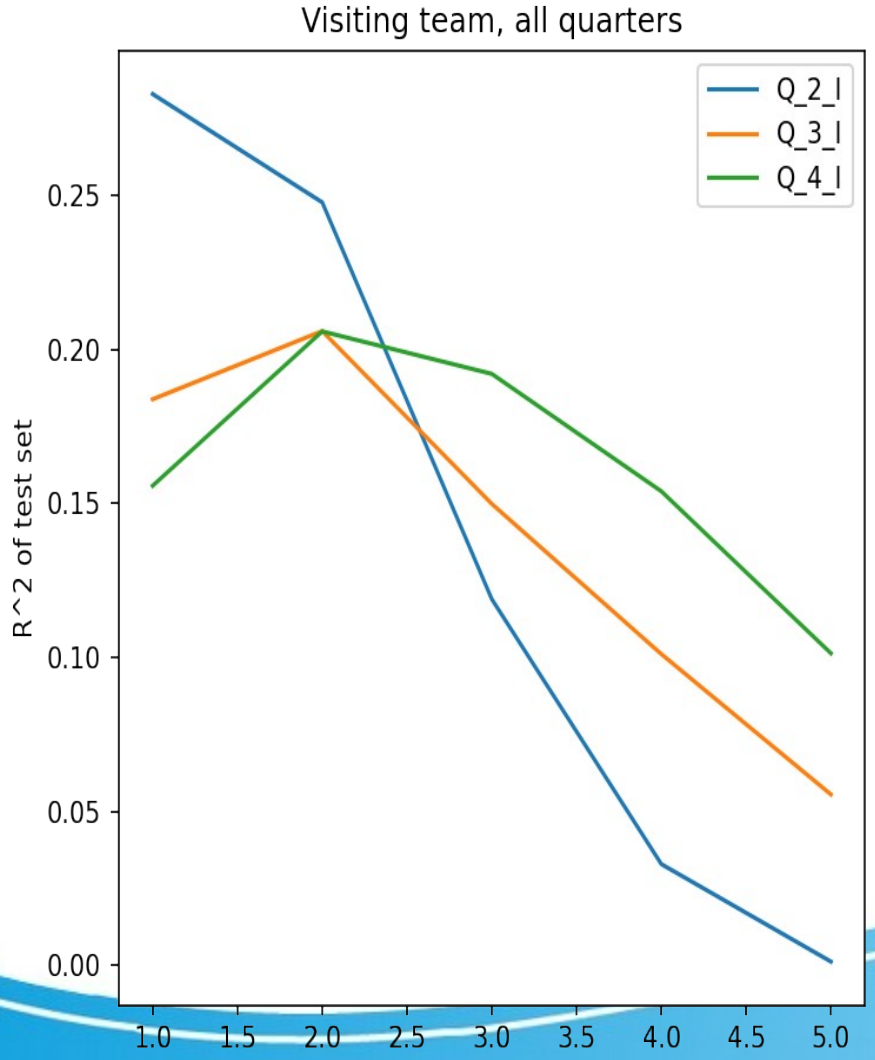
Insight

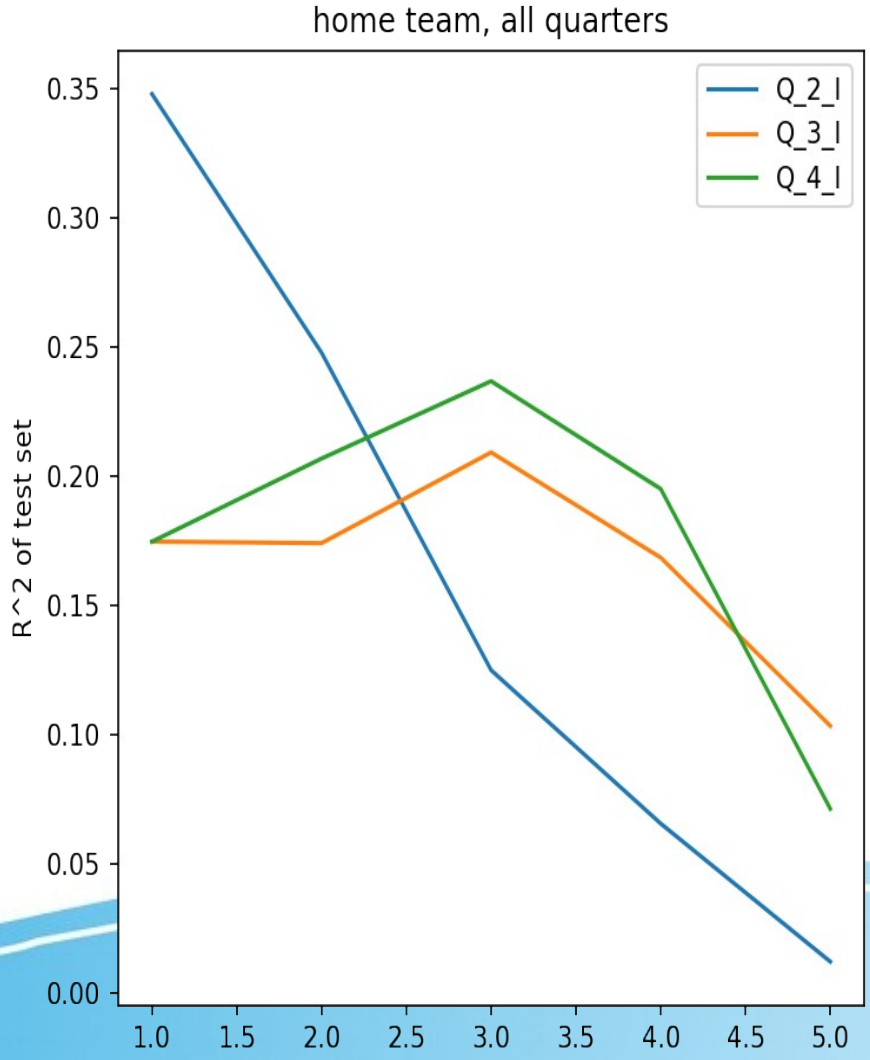
1. Low performance for some players.
   - missing features
   - Faults Committed, etc
   - Style change, 3-guard

2. Third quarter worst results.
   - Half time

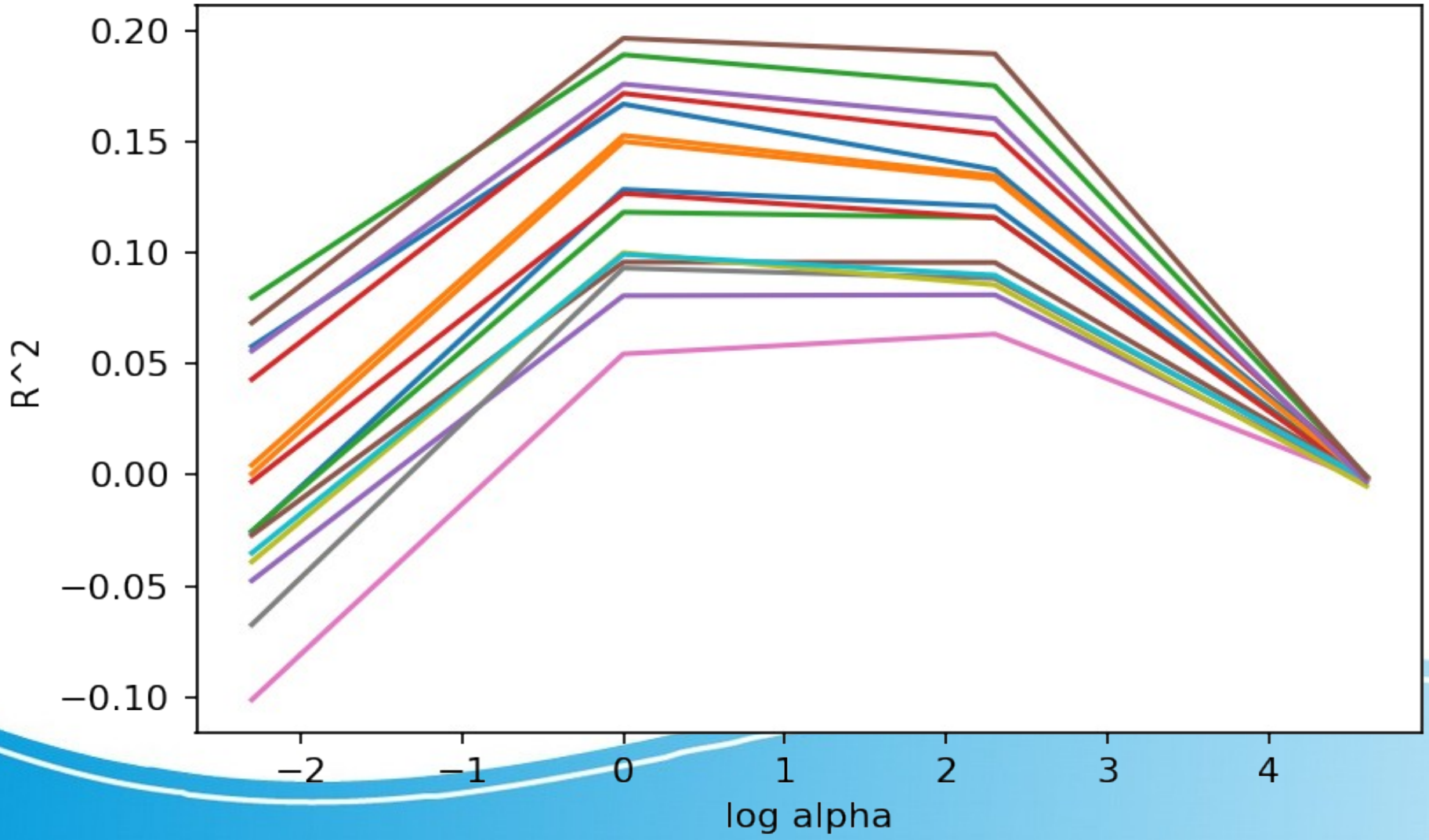
3. Coefficient interpretation
   - Negative coefficient with own playing time

Use data from all Previous Quarters

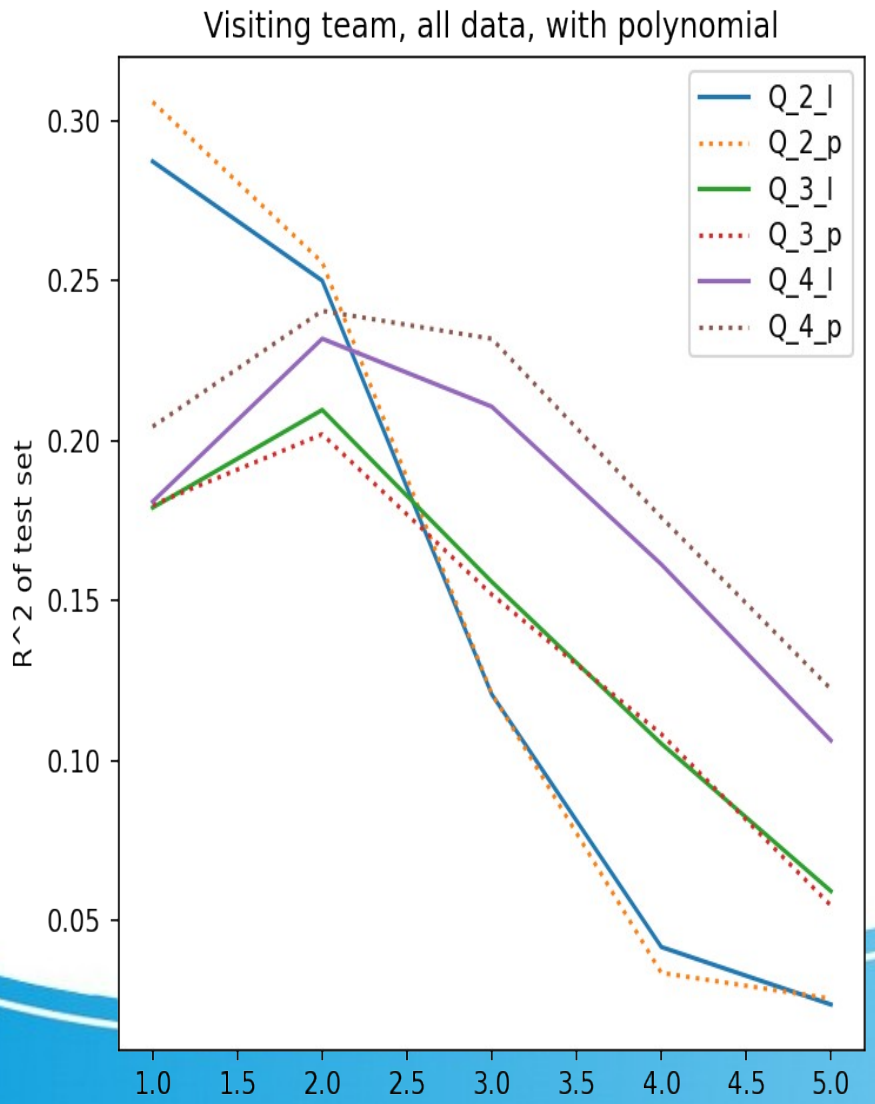


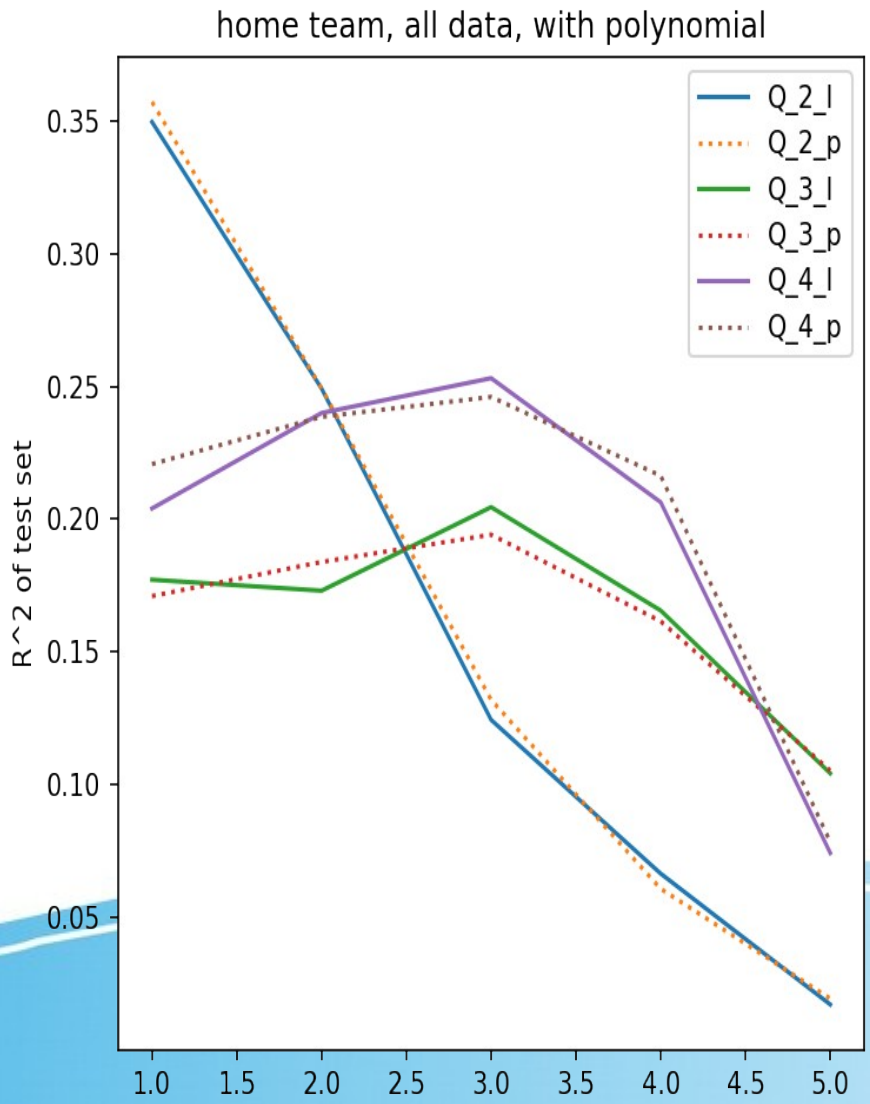


Regularization for Polynomial

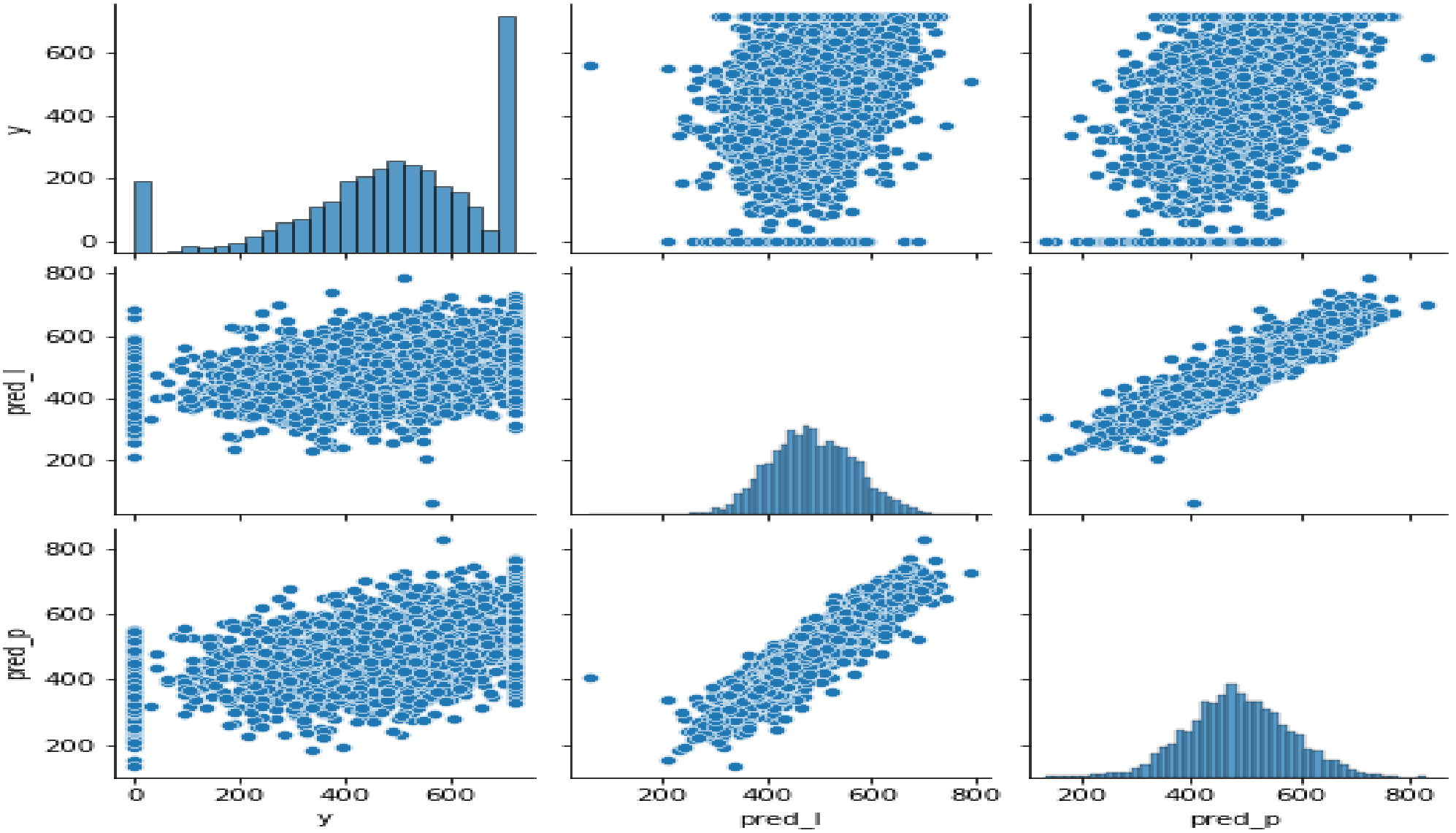


Add Player Experience





Issues



Predicting Points Scored

- R2 ~ 0.02
- Most parameter no statistical significance
- Positive coefficient with opposite team score

Future Work

- Add more features, like faults, style.
- Use Model with fixed ceiling on y
  - Decision tree